MATCH POINT START	
X	Y
289,906.07	954,403.78

MATCH POINT END	
X	Y
294,574.30	952,793.57

PUNCT LEGATURA DE INCEPUT	
X	Y
289,906.07	954,403.78

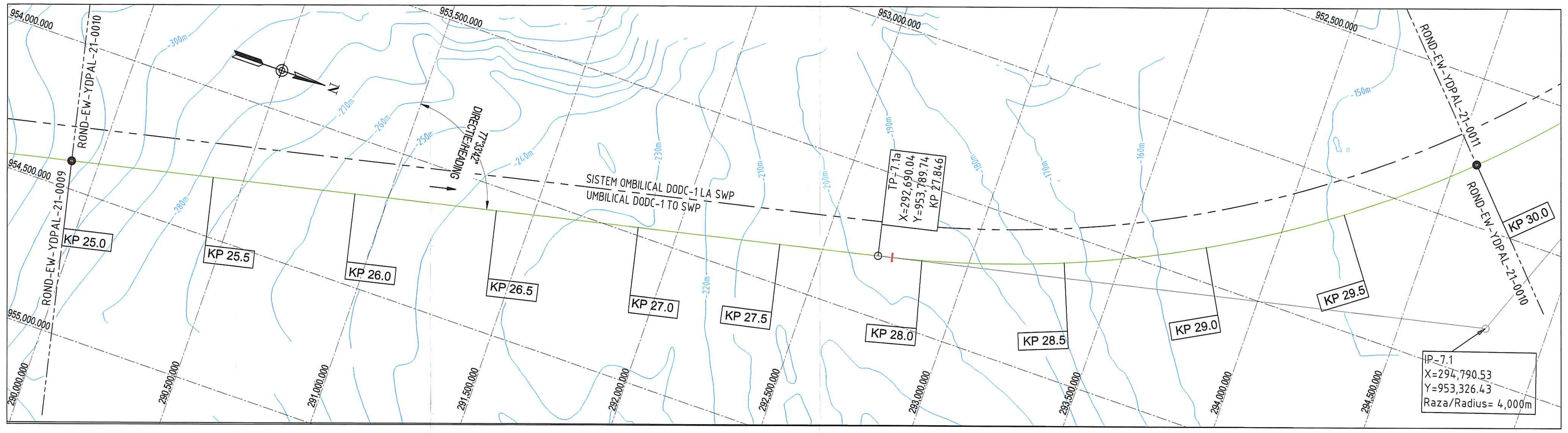
PUNCT LEGATURA DE FINAL	
X	Y
294,574.30	952,793.57

LEGENDA / LEGEND

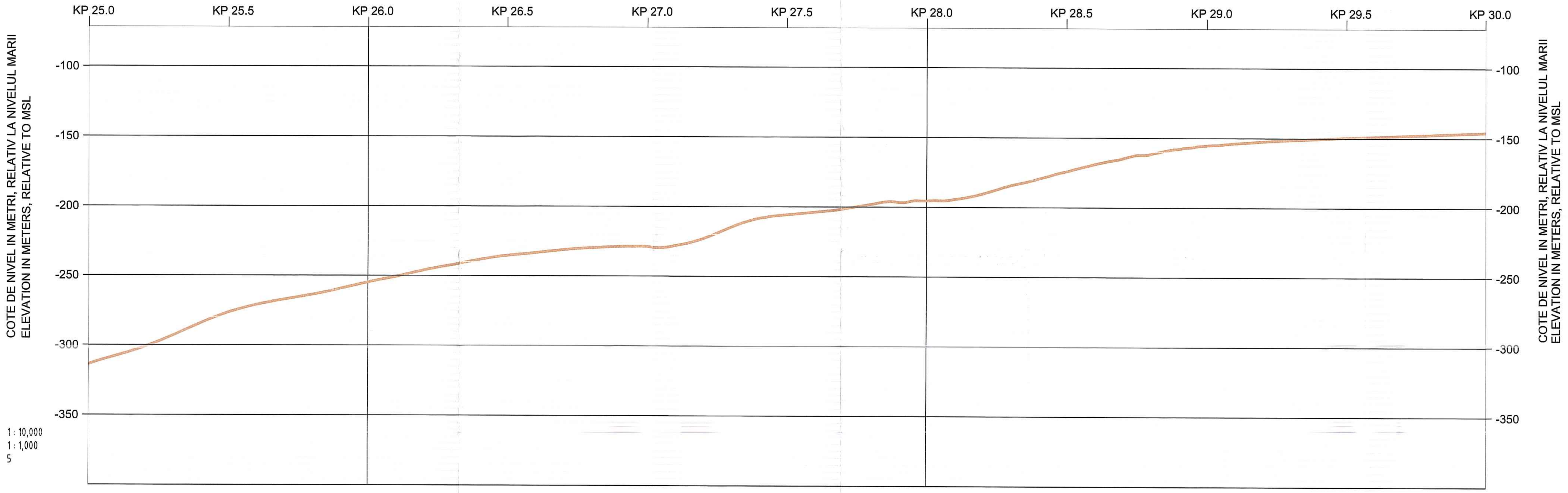
- CONDUCTA DE ADUCTIUNE DOMINO / DOMINO FLOWLINE
- SISTEM OMBILICAL DOMINO / DOMINO UMBILICAL
- PROFIL FUNDUL MARII / SEABED PROFILE
- SUPORT CONDUCTA / SLEEPER

NOTA:
Sistem Ombilical - Ansamblu de conductori electrici, fibra optica, conducte hidraulice, conducte injectie chimicale, etc. intr-un invelis metalic comun.
NOTE:
Umbilical - Assembly of electrical conductors, fiber optics, hydraulic lines, chemical injection pipes, etc. in a common metallic coating.

PROIECTIE IN PLAN / PLAN VIEW (Scala / Scale 1:10,000)



PROFIL LONGITUDINAL CONDUCTA / LONGITUDINAL PROFILE ALONG PIPELINE



ACRONIME
TP - PUNCT SCHIMBARE DIRECTIE
KP - POZITIE KILOMETRICA (CONDUCTA)
IP - PUNCT INFLEXIUNE

ACRONYMS
TP - TURN POINT
KP - KILOMETRIC POINT
IP - INFLEXION POINT

SCALA ORIZONTALA / HORIZONTAL SCALE	1 : 10,000
SCALA VERTICALA / VERTICAL SCALE	1 : 1,000
EXAGERARE VERTICALA / VERTICAL EXAGGERATION	5

DATE TEHNICE / ENGINEERING DATA

KP 25.000 — KP 27.744 — KP 27.796 — KP 27.846 — KP 27.896 — KP 27.996 — KP 28.115 — KP 29.600 — KP 30.000

Grup	Parametru	Group	Parameter	Valoare / Value
ELEMENTE TRASEU	ORIENTARE ('N) / RAZA DE CURBURA (m)	ROUTE ITEMS	STRAIGHT HEADING ('N) / BEND RADIUS (m)	77° 33' 42" (KP 25.000 – KP 27.846); 4,000 (KP 27.846 – KP 30.000)
	TRAVERSARE CABLU/CONDUCTA		CABLE / PIPELINE CROSSING	NU EXISTA / NONE
	TIP SOL LA SUPRAFATA FUNDULUI MARII		SURFACE SEABED SOIL	ZONA 3 - ARGILA VERZUI-INCHIS CU REZISTENTA FOARTE SCAZUTA (NOTA 4) / ZONE 3 - EXTREMELY LOW STRENGTH DARK GREENISH CLAY (NOTE 4); ZONA4 - ARGILA PRAFOASA, GRI CU REZISTENTA SCAZUTA SPRE MEDIE (USOR SUPRACONSOLIDATA) (NOTA 4) / ZONE 4 - LOW TO MEDIUM STRENGTH (SLIGHTLY OVER CONSOLIDATED) GREY SLIGHTLY SILTY CLAY (NOTE 4)
DATE CONDUCTA	TIP OTEL / D. EXT. (mm) / GROSIME PERETE (mm)	PIPELINE DATA	STEEL GRADE / O.D. (mm) / WALL THICKNESS (mm)	DNV SAWL 450 SFDPU / 457.2 / 26.1
	GROSIME PERETE DISP. ANTIDEFORMARE(mm)/ INTERVAL (m)		BUCKLE ARRESTOR W.T. (mm) / SPACING (m)	NU EXISTA / NONE
	STRAT ANTI-COROZIV/GROSIME(mm)/DENSITATE(kg/m³)		ANTI-CORR. COAT / THICK (mm) / DENSITY (kg/m³)	NU SE APLICA / N/A
	STRAT TERMOIZOLANT/GROSIME (mm)/DENSITATE (kg/m³)		EXT. THER. INS. COAT./THICK (mm)/DENSITY (kg/m³)	FBE + POLIPROLILENA SINTETICA / 75 / 790 (NOTA 11)/ FBE + SYNTACTIC POLYPROPYLENE / 75 / 790 (NOTE 11)
	STRAT BETON / STRAT INTERIOR PROTECTIE		CONCRETE COATING / INTERNAL COATING	NU EXISTA / NONE
	TIP SUDURA/TIP UMPLUTURA/DENSITATE (kg/m³)		FIELD JOINT TYPE / INFILL / DENSITY (kg/m³)	POLIURETAN / POLYURETHANE / 950 (TIP / TYP)
	TIP ANOD PROTECTIE / INTERVAL PLASARE (NR. DE SEGMENTE)		ANODE BRACELETS TYPE / SPACING (joints)	ALUMINIU (300mm x 50mm) 1 LA 24 SEGMENTE / AL (300mm x 50mm) / 1 EVRY 24 JOINTS
	GREUTATE CONDUCTA (kN/m) – IN AER (USCATA) (kN/m)		PIPELINE WEIGHT (kN/m) – IN AIR (DRY) (kN/m)	3.6927
	GREUTATE CONDUCTA (kN/m) – IN APA – GOALA (kN/m) / SG		PIPELINE WEIGHT (kN/m) – SUBMERGED – EMPTY (kN/m) / SG	0.7820 / 1.27
	GREUTATE CONDUCTA (kN/m) – IN APA – INUNDATA (kN/m) / SG		PIPELINE WEIGHT (kN/m) – SUBMERGED – FLOODED (kN/m) / SG	2.0769 / 1.71
	GREUTATE CONDUCTA (kN/m) – IN APA – FUNCTIONARE (kN/m) / SG		PIPELINE WEIGHT (kN/m) – SUBMERGED – OPERATION (kN/m) / SG	0.9361 (IN MEDIE / AVERAGE) / 1.32
DATE INCALZIRE ELECTRICA DIRECTA (NOTA 13)	GREUTATE CABLU DEH (kN/m) – D. EXT. (mm)	DEH DATA (NOTE 13)	DEH CABLE WEIGHT (kN/m) – O.D. (mm)	125
	GREUTATE CABLU DEH (kN/m) – IN AER (USCATA) (kg/m)		DEH CABLE WEIGHT (kN/m) – IN AIR (DRY) (kg/m)	43
	GREUTATE CABLU DEH (kN/m) – IN APA (kg/m) / SG		DEH CABLE WEIGHT (kN/m) – SUBMERGED (kg/m) / SG	32 / 3.9
	TIP LEGATURI/NR. DE LEGATURI PE SEGMENT		TYPE OF STRAP/No. OF STRAPS PER JOINT	VA FI CONFIRMAT / T.B.D.
LUCRARI PRE-INSTALARE CONDUCTA	ADANCIME DRAGARE (m) / LATIME (m)	PRE-LAY INT. WORKS	DREDGING DEPTH (m) / WIDTH (m)	NU EXISTA / NONE
	SUPORTI		SLEEPERS	INTIATOR FLAMBAJ BI-18-05 (NOTA 9 SI 16)/ BUCKLE INITIATOR BI-18-05 (NOTE 9 & 16)
LUCRARI POST-INSTALARE CONDUCTA	ADANCIME SANT (m)	POST-LAY INT. WORKS	TRENCHING DEPTH (m)	NU SE APLICA / N/A; VA FI CONFIRMAT (NOTA 15) / T.B.D. (NOTE 15)
	TIP UMPLUTURA / INALTIME STRAT ACOPERIRE (m)		BACKFILLING TYPE / COVER TOP (m)	NU SE APLICA / N/A; UMPLUTURA NATURALA / 0.2m (TBC) (NOTA 15) / NATURAL BACKFILL / 0.2m (TBC) (NOTE 15)
	DEPUNERE AGREGAT/PIETRIS		GRAVEL DUMPING	NU SE APLICA / N/A
LUNGIME TRONSON ADMISA	INSTALARE (m)	ALLOWABLE SPAN LENGTH (NOTE 12)	INSTALLATION (m)	53.3; 53.4
	HYDRO-TEST (m)		HYDROTEST (m)	22.3; 21.3
	FUNCTIONARE (m)		OPERATION (m)	39.1; 39.1 (NOTA 14 / NOTE 14); 43.4 (NOTA 14 /NOTE 14)
CERINTE SPECIFICE	TOLERANTA LA INSTALARE (+/-m)	SPECIFIC REQUIREM.	LAY TOLERANCE (+/-m)	±10; ±2 (NOTA 16 / NOTE 16); ±10
	ALTELE		OTHER	-

SE APLICA PREVEDERILE PRIVIND CONFIDENTIALITATEA DIN CONTRACTUL DE CONCESIUNE NEPTUN DEEP SI A CONTRACTULUI DE OPERATIUNI COMUNE AFERENT SI/SAU CONTRACTELOR DE CONFIDENTIALITATE APLICABILE IN NUMELE EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

SUBJECT TO CONFIDENTIALITY PROVISIONS OF THE NEPTUN DEEP CONCESSION AGREEMENT AND RELATED JOINT OPERATING AGREEMENT AND/OR THOSE OF THE APPLICABLE NON-DISCLOSURE AGREEMENT ON BEHALF OF EXXONMOBIL EXPLORATION AND PRODUCTION ROMANIA LIMITED.

NOTE

1. DACA NU SE PRECIZEAZA ALTFEL TOATE DIMENSIUNILE SUNT EXPRIMATE IN METRI.
2. TOATE COTELE DE NIVEL SUNT IN METRI, RELATIV LA NIVELUL MARII.
3. DATELE BATIMETRICE PROVIN DIN BAZA DE DATE GEOTEHNICE SI GEOFIZICE GIS ACTUALIZATE IN 2014, DOCUMENT FUGRO J31135-R-001(03). PENTRU PROIECTUL NEPTUN DEEP. BATIMETRIA PENTRU ACCESUL LA LOCATIA PLATFORMEI A FOST ACTUALIZATA PRIN DOCUMENTUL FUGRO 160424.V3 (2017)
4. DATELE DESPRE SOLUL DE PE FUNDUL MARII PROVIN DIN RAPORTUL INTEGRAT NEPTUN DEEP, ROND-EW-GRRPT-00-0015-001. A SE VEDEA DOCUMENTUL CU NUMARUL ROND-EW-YBDBM-20-0002 PENTRU DATE DESPRE SOL LA LOCATIA PLATFORMEI ACTUALIZAT CU MASURATORILE FUGRO 2017.
5. ORIENTARILE INDICATE DUPA NORDUL STEREO 70.
6. PENTRU DETALII PRIVIND LEGATURILE CU PLATFORMA SI LA LOCATIA SONDELOR SUBMARINE VEZI DOCUMENTELE : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 SI ROND-EW-YDPAL-22-0011.
7. PORTIUNILE CONDUCTEI DE ADUCTIUNE SITUATE IN AFARA SANTURILOR SI IN APROPIEREA MOSORULUI PLATFORMEI DE PRODUCTIE, VOR FI PROTEJATE CU SALTELE.
8. DISTANTA MINIMA INTRE CONDUCTA DE ADUCTIUNE SI SISTEMUL OMBILICAL ESTE DE 100m.(NOMINAL 120m, INCLUZAND TOLERANTE) DATORITA CERINTELOR INCALZIRII ELECTRICE DIRECTE (DEH).
9. PENTRU POZITIA SI CONFIGURATIA INITIATORULUI DE CURBURA VEZI DOC. ROND-EW-YDLAY-21-0012 / 0013.
10. PENTRU DETALII PRIVIND LUCRARILE DE PRE-INTERVENTIE, LEGATE DE PROFILUL SANTULUI CONSULTATI DOC. ROND-EW-YDPLX-21-0003/0004.
11. SE VA CONFIRMA GROSIMEA NECESARA PENTRU IZOLATIE CONFORM FISA DE DATE TEHNICE PENTRU IZOLATIE ROND-EW-YSTDS-20-0031.
12. A SE CONSULTA ROND-EW-YRSTS-21-0002, RAPORT TRONSON.
13. A SE CONFIRMA PROPRIETATILE INCALZIRII ELECTRICE DIRECTE (DEH) IN PROIECTUL DETALIAT.
14. NU ESTE APLICABIL PENTRU CONDUCTE INGROPATE.
15. TIPUL DE UMPLUTURA VA FI CONFIRMAT IN PROIECTUL DETALIAT.
16. LOCATIA SI NECESITATEA INITIATORULUI DE CURBURA VOR FI CONFIRMATE IN PROIECTUL DETALIAT IN FUNCTIE DE CERINTELE PROCESULUI EXTINS DE INGROPARE A CONDUCTEI.

NOTES

1. ALL DIMENSIONS ARE IN METERS UNLESS NOTED OTHERWISE.
2. ALL ELEVATIONS ARE IN METERS AND RELATIVE TO MSL.
3. BATHYMETRY DATA FROM 2014 GEOTECHNICAL AND GEOPHYSICAL GIS DATABASE UPDATE, FUGRO DOCUMENT J31135-R-001(03) FOR THE NEPTUN DEEP DEVELOPMENT. PLATFORM LOCATION APPROACH BATHYMETRY UPDATED BY FUGRO DOCUMENT 160424.V3 (2017).
4. SEABED SOIL DATA FROM NEPTUN DEEP INTEGRATED REPORT, ROND-EW-GRRPT-00-0015-001. SEE DESIGN DOCUMENT NUMBER ROND-EW-YBDBM-20-0002 FOR PLATFORM LOCATION SOIL DATA UPDATED BY FUGRO SURVEY 2017.
5. HEADINGS INDICATED ARE RELATIVE TO STEREO 70 NORTH.
6. FOR DETAILS OF TIE-INS AT PLATFORM AND SUBSEA WELL LOCATION REFER TO DRAWING : ROND-EW-YDLAY-22-0012, ROND-EW-YDLAY-22-0005 AND ROND-EW-YDPAL-22-0011.
7. AT SHALLOW WATER PLATFORM SPOOL AND NO TRENCHED FLOWLINE SECTION WILL BE PROTECTED BY MATTRESSES.
8. MINIMUM DISTANCE OF 100m BETWEEN FLOWLINE AND UMBILICAL (120m NOMINAL INCLUDING TOLERANCES) DUE TO DEH REQUIREMENTS.
9. FOR BUCKLE INITIATOR POSITION AND CONFIGURATION REFER TO ROND-EW-YDLAY-21-0012 / 0013.
10. PRE-INTERVENTION WORKS FOR TRENCHING PROFILE DETAILS REFER TO ROND-EW-YDPLX-21-0003/0004.
11. THICKNESS TO BE CONFIRMED WHILE MEETING INSULATION REQUIREMENTS IN ROND-EW-YSTDS-20-0031, TECHNICAL DATA SHEET FOR INSULATION.
12. REFERENCE ROND-EW-YRSTS-21-0002, SPAN REPORT.
13. DEH PROPERTIES TO BE CONFIRMED DURING DETAILED DESIGN.
14. NOT APPLICABLE IN CASE OF BURIED PIPE.
15. TYPE OF BACKFILL TO BE CONFIRMED IN DETAILED DESIGN.
16. LOCATION AND NEED OF BUCKLE INITIATOR TO BE CONFIRMED IN DETAILED DESIGN DEPENDING UPON EXTENDED BURIAL FLOWLINE REQUIREMENTS.

DOCUMENTE DE REFERINTA / REFERENCE DOCUMENTS

NUMAR PLANSA	DENUMIRE	DRAWING NUMBER	DESCRIPTION
ROND-EW-YDLAY-22-0012	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC1	ROND-EW-YDLAY-22-0012	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-1.
ROND-EW-YDLAY-22-0005	PLAN ACCES SISTEM OMBILICAL LA DOMINO DODC2	ROND-EW-YDLAY-22-0005	DOMINO FLOWLINE WELL APPROACH LAYOUT DODC-2
ROND-EW-YDLAY-22-0011	ARANJAMENT ACCES CONDUCTA DE ADUCTIUNE SI CONDUCTA GAZE NATURALE LA PLATFORMA (SWP)	ROND-EW-YDLAY-22-0011	FLOWLINE AND PRODUCTION LINE PLATFORM (SWP) APPROACH ARRANGEMENT
ROND-EW-YDPAL-22-0003/0008	FISE ALINIAMENT SISTEM OMBILICAL DOMINO	ROND-EW-YDPAL-22-0003/0008	DOMINO UMBILICAL ALIGNMENT SHEETS
ROND-EW-YDLAY-21-0012/0013	PLAN LUCRARI ATENUARE DEFORMARE LATERALA CONDUCTA ADUCTIUNE DOMINO	ROND-EW-YDLAY-21-0012/0013	DOMINO LATERAL BUCKLING MITIGATION WORKS LAYOUT
ROND-EW-YDPLX-21-0003/0004	LUCRARI INTERVENTIE PRE-INSTALARE	ROND-EW-YDPLX-21-0003/0004	DOMINO PRE-LAY INTERVENTION WORKS

SCALA / SCALE BAR

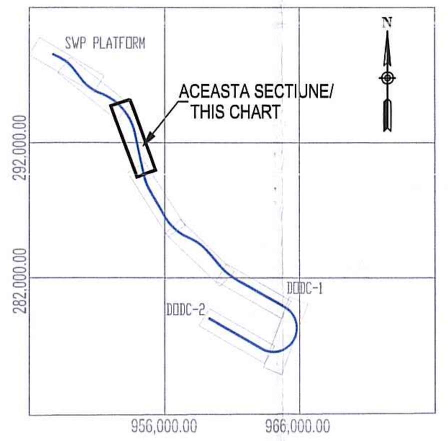
METRI / METERS: 0 100 500 1,000

SCALA ORIZONTALA 1:10,000 (FORMAT "A1") / HORIZONTAL SCALE 1:10,000 (AT "A1" SIZE)

PARAMETRI GEODEZIE SI DE PROIECTIE / GEODETIC & PROJECTION PARAMETERS

DATE GEODEZICE	STEREO 70	GEODETIC DATUM	STEREO 70
PROIECTIE	Dublu Stereografica	PROJECTION	Double Stereographic
Meridianul central (MC)	25.0	Central meridian (CM)	25.0
Latitudine Origine	46.0	Latitude of Origin	46.0
Falsa origine estica	500,000.0	False Easting at origin	500,000.0
Falsa origine nordica	500,000.0	False Northing at origin	500,000.0
Factor de scala la MC	0.99975	Scale factor at CM	0.99975
DATE VERTICALE	MSL (NIVELUL MARII)	VERTICAL DATUM	MSL

PLAN DE REFERINTA/KEY PLAN



NOTA / NOTE:

Plansa este intocmita in sistemul de coordonate WGS 84. Coordonatele STEREO 70 au fost obtinute prin conversie, folosind metode electronice de calcul si parametri specifici. Conversia presupune transformari (translatari, rotiri si/sau scalari) ale coordonatelor WGS 84.
Definitorii sunt documentele realizate in sistemul WGS 84. Acestea vor fi utilizate in scopul punerii in opera a proiectului. Documentele emise in sistemul STEREO 70 reprezinta raspunsul la cerintele autoritatilor si legislatiei romanesti.

The plan is prepared in WGS 84 coordinate system. The STEREO 70 coordinates were obtained by conversion, using electronic calculation methods and specific parameters. The conversion involves transformations (translations, rotations and/or scaling) of the WGS 84 coordinates.
The defining are the documents made in the WGS 84 system. These will be used for the purpose of implementing the project. The documents issued in the STEREO 70 system represent the answer to the requirements of the Romanian authorities and legislation.

Conform legislatiei romanesti, virgula si punctul sunt utilizate invers, pentru definirea zecimalelor.

Dimensiunile in sistem US au fost definite asfel: Simbolul vírgula a fost folosit pentru separarea cifrelor din interiorul numere care definesc sute, mii sau zeci in functie de caz. Subunitatile de masura (zecimalele) au fost separate prin punct. Prin urmare zecimalele vor fi cifrele din interiorul numerelor aflate dupa simbolul punct.

According to the Romanian legislation the comma and the point are used in reverse, for the definition of decimals.

The dimensions in the US system have been defined as follows: The comma symbol has been used to separate digit inside the numbers when the digit define hundreds, thousands or tens depending on the case. The digit of decimals are separated by a point. In according with the rules in Romania the coma and point are use in opposite way for defined the digit inside of number. For this reason all the digit inside of number after point will be read like decimals.

SOCIETATEA COMERCIALA ILF CONSULTING ENGINEERS ROMANIA S.R.L. PLOIESTI PRAHOVA

VERIFICATOR PROIECTE ING. BUTNARIU IOANA ... ROMANIA

PROIECT NEPTUN DEEP / NEPTUN DEEP PROJECT

REV	DATA / DATE	DENUMIRE, SCOPUL REVIZIEI / ISSUE, SCOPE OF REVISION	DESENAT / PREPARED	PROIECTAT / DESIGNED	SEF PROIECT / APPROVED
1-D	12.03.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-C	11.01.21	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	M. DUMITRU	C. STEFAN	N. EREMIA
1-B	29.05.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
1-A	03.02.20	EMIS PENTRU VERIFICARE / ISSUED FOR REVIEW	O. MOISE	C. STEFAN	N. EREMIA
VERIFICATOR / CHECKER			I. BUTNARIU		ANRE
VERIFICATOR/EXPERT / CHECKER/EXPERT		REFERAT NR. / EXPERTIZA NR. / DATA / CHECKER REPORT / EXPERTISE NO. / DATE	NUME / NAME	SEMNATURA / SIGNATURE	DOMENIU / EXIGENCIES

PROIECTANT / ENGINEERING CONTRACTOR
ILF CONSULTING ENGINEERS ROMANIA
STR. NEGRU VODA NR.16 ,100149, PLOIESTI
J29/3071/2007, RO 22804820
S.C. JEREMY PROMASTER S.R.L.
STR. CURCUBEULUI, NR. 14A, PLOIESTI,

JPM PLOIESTI — ILF CONSULTING ENGINEERS

REV.	REV. DATE	REV. DESCRIPTION	ORIG	REV	APP	PROJ APP
1	16OCT17	RE-ISSUED FOR IFD	RO	EP	SS	JG
0	07JUL17	ISSUE FOR IFD	RO	EP	SS	JG

ExxonMobil
Exploration and Production
Romania Limited

CONDUCTA DE ADUCTIUNE DOMINO
DODC-2 - SWP/ DOMINO FLOWLINE
DODC-2 - SWP
FISA ALINIAMENT
ALIGNMENT SHEET
FISA 6 DIN 8
SHEET 6 OF 8

SCALA / SCALE	NR. PLANSA / DWG. NO.	FAZA / PHASE	REV. / REV.
1 : 10,000	ROND-EW-YDPAL-21-0010-C	DTAC	1-D

A1+ (1092x594)